

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Yu et al.

Art Unit: 1646

Application No.: 09/589,287

Examiner: Prasad, S

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For: Antibodies to Neutrokin-alpha (as amended)

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CLEAN VERSION OF THE ENTIRE SET OF PENDING CLAIMS

UNDER 37 C.F.R. § 1.121(c)(3)

26. (New) An isolated antibody or portion thereof that specifically binds to a protein consisting of an amino acid sequence of amino acid residues 1 to 285 of SEQ ID NO:2.

27. (New) The antibody or portion thereof of claim 26 which is a monoclonal antibody.

28. (New) The antibody or portion thereof of claim 26 which is a polyclonal antibody.

29. (New) The antibody or portion thereof of claim 26 which is a Fab fragment.

30. (New) The antibody or portion thereof of claim 26 which is labeled.

31. (Once Amended) The antibody or portion thereof of claim 30 wherein the label is selected from the group consisting of:

- (a) an enzyme label;
- (b) a radioisotope;
- (c) a fluorescent label; and
- (d) biotin.

32. (Once Amended) The antibody or portion thereof of claim 31 wherein the label is a radioisotope selected from the group consisting of:

- (a) ^{125}I ;
- (b) ^{121}I ;
- (c) ^{131}I ;
- (d) ^{112}In ; and
- (e) $^{99\text{m}}\text{Tc}$.

33. (New) A composition comprising the antibody or portion thereof of claim 26 and a carrier.

34. (New) An isolated cell that produces the antibody of claim 26.

35. (New) An isolated cell line that produces the antibody of claim 26.

36. (New) A hybridoma that produces the antibody of claim 26.

37. (New) A hybridoma that produces the antibody of claim 27.

38. (New) A method of detecting Neutrokin- α protein comprising:

- (a) contacting the Neutrokin- α protein with the antibody or portion thereof of claim 26; and
- (b) detecting the Neutrokin- α protein.

39. (New) The method of claim 38 wherein the Neutrokin- α protein is in a biological sample.

40. (New) The method of claim 38 wherein the Neutrokin- α protein is *in vivo*.

41. (New) The method of claim 38 wherein the antibody or portion thereof is a monoclonal antibody.

42. (New) The method of claim 38 wherein the antibody or portion thereof is a polyclonal antibody.

43. (New) The method of claim 38 wherein the antibody or portion thereof is a Fab fragment.

44. (New) The method of claim 38 wherein the antibody or portion thereof is labeled.

45. (New) The method of claim 44 wherein the label is selected from the group consisting of:

- (a) an enzyme label;
- (b) a radioisotope;
- (c) a fluorescent label; and
- (d) biotin.

46. (New) The method of claim 45 wherein the label is a radioisotope selected from the group consisting of:

- (a) ^{125}I ;
- (b) ^{121}I ;
- (c) ^{131}I ;
- (d) ^{112}In ; and
- (e) $^{99\text{m}}\text{Tc}$.

47. (New) An isolated antibody or portion thereof that specifically binds to a protein consisting of an amino acid sequence of amino acid residues 73 to 285 of SEQ ID NO:2.

48. (New) The antibody or portion thereof of claim 47 which is a monoclonal antibody.

49. (New) The antibody or portion thereof of claim 47 which is a polyclonal antibody.

50. (New) The antibody or portion thereof of claim 47 which is a Fab fragment.
51. (New) The antibody or portion thereof of claim 47 which is labeled.
52. (Once Amended) The antibody or portion thereof of claim 51 wherein the label is selected from the group consisting of:
- (a) an enzyme label;
 - (b) a radioisotope;
 - (c) a fluorescent label; and
 - (d) biotin.
53. (Once Amended) The antibody or portion thereof of claim 52 wherein the label is a radioisotope selected from the group consisting of:
- (a) ^{125}I ;
 - (b) ^{121}I ;
 - (c) ^{131}I ;
 - (d) ^{112}In ; and
 - (e) $^{99\text{m}}\text{Tc}$.
54. (New) A composition comprising the antibody or portion thereof of claim 47 and a carrier.
55. (New) An isolated cell that produces the antibody of claim 47.
56. (New) An isolated cell line that produces the antibody of claim 47.
57. (New) A hybridoma that produces the antibody of claim 47.
58. (New) A hybridoma that produces the antibody of claim 48.

59. (New) A method of detecting Neutrokin- α protein comprising:
- (a) contacting the Neutrokin- α protein with the antibody or portion thereof of claim 47; and
 - (b) detecting the Neutrokin- α protein.
60. (New) The method of claim 59 wherein the Neutrokin- α protein is in a biological sample.
61. (New) The method of claim 59 wherein the Neutrokin- α protein is *in vivo*.
62. (New) The method of claim 59 wherein the antibody or portion thereof is a monoclonal antibody.
63. (New) The method of claim 59 wherein the antibody or portion thereof is a polyclonal antibody.
64. (New) The method of claim 59 wherein the antibody or portion thereof is a Fab fragment.
65. (New) The method of claim 59 wherein the antibody or portion thereof is labeled.
66. (New) The method of claim 65 wherein the label is selected from the group consisting of:
- (a) an enzyme label;
 - (b) a radioisotope;
 - (c) a fluorescent label; and
 - (d) biotin.

67. (New) The method of claim 66 wherein the label is a radioisotope selected from the group consisting of:

- (a) ^{125}I ;
- (b) ^{121}I ;
- (c) ^{131}I ;
- (d) ^{112}In ; and
- (e) $^{99\text{m}}\text{Tc}$.

68. (New) An isolated antibody or portion thereof that specifically binds to a protein consisting of an amino acid sequence selected from the group consisting of:

- (a) the amino acid sequence of amino acid residues n to 285 of SEQ ID NO:2, where n is an integer in the range of 2-190;
- (b) the amino acid sequence of amino acid residues 1 to m of SEQ ID NO:2, where m is an integer in the range of 274 to 284; and
- (c) the amino acid sequence of amino acid residues n to m of SEQ ID NO:2, where n is an integer in the range of 2-190 and m is an integer in the range of 274-284.

69. (New) The antibody or portion thereof of claim 68 that specifically binds a protein consisting of amino acid sequence (a).

70. (New) The antibody or portion thereof of claim 68 that specifically binds a protein consisting of amino acid sequence (b).

71. (New) The antibody or portion thereof of claim 68 that specifically binds a protein consisting of amino acid sequence (c).

72. (New) The antibody or portion thereof of claim 68 which is a monoclonal antibody.

73. (New) The antibody or portion thereof of claim 68 which is a polyclonal antibody.

74. (New) The antibody or portion thereof of claim 68 which is a Fab fragment.

75. (New) The antibody or portion thereof of claim 68 which is labeled.

76. (Once Amended) The antibody or portion thereof of claim 75 wherein the label is selected from the group consisting of:

- (a) an enzyme label;
- (b) a radioisotope;
- (c) a fluorescent label; and
- (d) biotin.

77. (Once Amended) The antibody or portion thereof of claim 76 wherein the label is a radioisotope selected from the group consisting of:

- (a) ^{125}I ;
- (b) ^{121}I ;
- (c) ^{131}I ;
- (d) ^{112}In ; and
- (e) $^{99\text{m}}\text{Tc}$.

78. (New) A composition comprising the antibody or portion thereof of claim 68 and a carrier.

79. (New) An isolated cell that produces the antibody of claim 68.

80. (New) An isolated cell line that produces the antibody of claim 68.

81. (New) A hybridoma that produces the antibody of claim 68.

82. (New) A hybridoma that produces the antibody of claim 72.

83. (Once Amended) A method of detecting Neutrokin- α protein comprising:

- (a) contacting the Neutrokin- α protein with the antibody or portion thereof of claim 68; and
- (b) detecting the Neutrokin- α protein.

84. (New) The method of claim 83 wherein the Neutrokin- α protein is in a biological sample.

85. (New) The method of claim 83 wherein the Neutrokin- α protein is *in vivo*.

86. (New) The method of claim 83 wherein the antibody or portion thereof is a monoclonal antibody.

87. (New) The method of claim 83 wherein the antibody or portion thereof is a polyclonal antibody.

88. (New) The method of claim 83 wherein the antibody or portion thereof is a Fab fragment.

89. (New) The method of claim 83 wherein the antibody or portion thereof is labeled.

90. (New) The method of claim 89 wherein the label is selected from the group consisting of:

- (a) an enzyme label;
- (b) a radioisotope;
- (c) a fluorescent label; and
- (d) biotin.

91. (New) The method of claim 90 wherein the label is a radioisotope selected from the group consisting of:

- (a) ^{125}I ;
- (b) ^{121}I ;
- (c) ^{131}I ;
- (d) ^{112}In ; and
- (e) $^{99\text{m}}\text{Tc}$.

92. (New) An isolated antibody or portion thereof that specifically binds to a protein consisting of the amino acid sequence of amino acid residues 134-285 of SEQ ID NO:2.

93. (New) The antibody or portion thereof of claim 92 which is a monoclonal antibody.

94. (New) The antibody or portion thereof of claim 92 which is a polyclonal antibody.

95. (New) The antibody or portion thereof of claim 92 which is a Fab fragment.

96. (New) The antibody or portion thereof of claim 92 which is labeled.

97. (Once Amended) The antibody or portion thereof of claim 96 wherein the label is selected from the group consisting of:

- (a) an enzyme label;
- (b) a radioisotope;
- (c) a fluorescent label; and
- (d) biotin.

98. (Once Amended) The antibody or portion thereof of claim 97 wherein the label is a radioisotope selected from the group consisting of:

- (a) ^{125}I ;
- (b) ^{121}I ;
- (c) ^{131}I ;
- (d) ^{112}In ; and
- (e) $^{99\text{m}}\text{Tc}$.

99. (New) A composition comprising the antibody or portion thereof of claim 92 and a carrier.

100. (New) An isolated cell that produces the antibody of claim 92.

101. (New) An isolated cell line that produces the antibody of claim 92.

102. (New) A hybridoma that produces the antibody of claim 92.

103. (New) A hybridoma that produces the antibody of claim 93.

104. (Once Amended) A method of detecting Neutrokin- α protein comprising:

- (a) contacting the Neutrokin- α protein with the antibody or portion thereof of claim 92; and
- (b) detecting the Neutrokin- α protein.

105. (New) The method of claim 104 wherein the Neutrokin- α protein is in a biological sample.

106. (New) The method of claim 104 wherein the Neutrokin- α protein is *in vivo*.

107. (New) The method of claim 104 wherein the antibody or portion thereof is a monoclonal antibody.

108. (New) The method of claim 104 wherein the antibody or portion thereof is a polyclonal antibody.

109. (New) The method of claim 104 wherein the antibody or portion thereof is a Fab fragment.

110. (New) The method of claim 104 wherein the antibody or portion thereof is labeled.

111. (New) The method of claim 110 wherein the label is selected from the group consisting of:

- (a) an enzyme label;
- (b) a radioisotope;
- (c) a fluorescent label; and
- (d) biotin.

112. (New) The method of claim 111 wherein the label is a radioisotope selected from the group consisting of:

- (a) ^{125}I ;
- (b) ^{121}I ;
- (c) ^{131}I ;
- (d) ^{112}In ; and
- (e) $^{99\text{m}}\text{Tc}$.

113. (Once Amended) An isolated antibody or portion thereof that specifically binds to a protein consisting of a fragment of SEQ ID NO:2, wherein said fragment comprises an amino acid sequence of at least 30 contiguous amino acid residues of SEQ ID NO:2

114. (Cancelled)

115. (New) The antibody or portion thereof of claim 113 wherein said fragment comprises an amino acid sequence of at least 50 contiguous amino acid residues of SEQ ID NO:2.

116. (New) The antibody or portion thereof of claim 113 which is a monoclonal antibody.

117. (New) The antibody or portion thereof of claim 113 which is a polyclonal antibody.

118. (New) The antibody or portion thereof of claim 113 which is a Fab fragment.

119. (New) The antibody or portion thereof of claim 113 which is labeled.

120. (Once Amended) The antibody or portion thereof of claim 119 wherein the label is selected from the group consisting of:

- (a) an enzyme label;
- (b) a radioisotope;
- (c) a fluorescent label; and
- (d) biotin.

121. (Once Amended) The antibody or portion thereof of claim 120 wherein the label is a radioisotope selected from the group consisting of:

- (a) ^{125}I ;
- (b) ^{121}I ;
- (c) ^{131}I ;
- (d) ^{112}In ; and
- (e) $^{99\text{m}}\text{Tc}$.

122. (New) A composition comprising the antibody or portion thereof of claim 113 and a carrier.

123. (New) An isolated cell that produces the antibody of claim 113.
124. (New) An isolated cell line that produces the antibody of claim 113.
125. (New) A hybridoma that produces the antibody of claim 113.
126. (New) A hybridoma that produces the antibody of claim 116.
127. (Once Amended) A method of detecting Neutrokin- α protein comprising:
- (a) contacting the Neutrokin- α protein with the antibody or portion thereof of claim 113; and
 - (b) detecting the Neutrokin- α protein.
128. (New) The method of claim 127 wherein the Neutrokin- α protein is in a biological sample.
129. (New) The method of claim 127 wherein the Neutrokin- α protein is *in vivo*.
130. (New) The method of claim 127 wherein the antibody or portion thereof is a monoclonal antibody.
131. (New) The method of claim 127 wherein the antibody or portion thereof is a polyclonal antibody.
132. (New) The method of claim 127 wherein the antibody or portion thereof is a Fab fragment.
133. (New) The method of claim 127 wherein the antibody or portion thereof is labeled.
134. (New) The method of claim 133 wherein the label is selected from the group consisting of:

- (a) an enzyme label;
- (b) a radioisotope;
- (c) a fluorescent label; and
- (d) biotin.

135. (New) The method of claim 134 wherein the label is a radioisotope selected from the group consisting of:

- (a) ^{125}I ;
- (b) ^{121}I ;
- (c) ^{131}I ;
- (d) ^{112}In ; and
- (e) $^{99\text{m}}\text{Tc}$.

136. (New) An isolated antibody, or portion thereof that specifically binds to a protein consisting of a fragment of SEQ ID NO:2, wherein said fragment comprises an amino acid sequence selected from the group consisting of:

- (a) the amino acid sequence of amino acid residues 115 to 147 of SEQ ID NO:2;
- (b) the amino acid sequence of amino acid residues 150 to 163 of SEQ ID NO:2;
- (c) the amino acid sequence of amino acid residues 171 to 194 of SEQ ID NO:2;
- (d) the amino acid sequence of amino acid residues 223 to 247, of SEQ ID NO:2; and
- (e) the amino acid sequence of amino acid residues 271 to 278 of SEQ ID NO:2.

137. (New) The antibody or portion thereof of claim 136 that specifically binds a protein consisting of a fragment of SEQ ID NO:2, wherein said fragment comprises amino acid sequence (a).

138. (New) The antibody or portion thereof of claim 136 that specifically binds a protein consisting of a fragment of SEQ ID NO:2, wherein said fragment comprises amino acid sequence (b).

139. (New) The antibody or portion thereof of claim 136 that specifically binds a protein consisting of a fragment of SEQ ID NO:2, wherein said fragment comprises amino acid sequence (c).

140. (New) The antibody or portion thereof of claim 136 that specifically binds a protein consisting of a fragment of SEQ ID NO:2, wherein said fragment comprises amino acid sequence (d).

141. (New) The antibody or portion thereof of claim 136 that specifically binds a protein consisting of a fragment of SEQ ID NO:2, wherein said fragment comprises amino acid sequence (e).

142. (New) The antibody or portion thereof of claim 136 which is a monoclonal antibody.

143. (New) The antibody or portion thereof of claim 136 which is a polyclonal antibody.

144. (New) The antibody or portion thereof of claim 136 which is a Fab fragment.

145. (New) The antibody or portion thereof of claim 136 which is labeled.

146. (Once Amended) The antibody or portion thereof of claim 145 wherein the label is selected from the group consisting of:

- (a) an enzyme label;
- (b) a radioisotope;
- (c) a fluorescent label; and
- (d) biotin.

147. (Once Amended) The antibody or portion thereof of claim 146 wherein the label is a radioisotope selected from the group consisting of:

- (a) ^{125}I ;
- (b) ^{121}I ;
- (c) ^{131}I ;
- (d) ^{112}In ; and
- (e) $^{99\text{m}}\text{Tc}$.

148. (New) A composition comprising the antibody or portion thereof of claim 136 and a carrier.

149. (New) An isolated cell that produces the antibody of claim 136.

150. (New) An isolated cell line that produces the antibody of claim 136.

151. (New) A hybridoma that produces the antibody of claim 136.

152. (New) A hybridoma that produces the antibody of claim 142.

153. (Once Amended) A method of detecting Neutrokin- α protein comprising:

- (a) contacting the Neutrokin- α protein with the antibody or portion thereof of claim 136; and
- (b) detecting the Neutrokin- α protein.

154. (New) The method of claim 153 wherein the Neutrokin- α protein is in a biological sample.

155. (New) The method of claim 153 wherein the Neutrokin- α protein is *in vivo*.

156. (New) The method of claim 153 wherein the antibody or portion thereof is a monoclonal antibody.

157. (New) The method of claim 153 wherein the antibody or portion thereof is a polyclonal antibody.

158. (New) The method of claim 153 wherein the antibody or portion thereof is a Fab fragment.

159. (New) The method of claim 153 wherein the antibody or portion thereof is labeled.

160. (New) The method of claim 159 wherein the label is selected from the group consisting of:

- (a) an enzyme label;
- (b) a radioisotope;
- (c) a fluorescent label; and
- (d) biotin.

161. (New) The method of claim 160 wherein the label is a radioisotope selected from the group consisting of:

- (a) ^{125}I ;
- (b) ^{121}I ;
- (c) ^{131}I ;
- (d) ^{112}In ; and
- (e) $^{99\text{m}}\text{Tc}$.

162. (New) An isolated antibody or portion thereof that specifically binds to a protein consisting of the full-length protein encoded by the cDNA contained in ATCC Deposit Number 97768.

163. (New) The antibody or portion thereof of claim 162 which is a monoclonal antibody.

164. (New) The antibody or portion thereof of claim 162 which is a polyclonal antibody.

165. (New) The antibody or portion thereof of claim 162 which is a Fab fragment.

166. (New) The antibody or portion thereof of claim 162 which is labeled.

167. (Once Amended) The antibody or portion thereof of claim 166 wherein the label is selected from the group consisting of:

- (a) an enzyme label;
- (b) a radioisotope;
- (c) a fluorescent label; and
- (d) biotin.

168. (Once Amended) The antibody or portion thereof of claim 167 wherein the label is a radioisotope selected from the group consisting of:

- (a) ^{125}I ;
- (b) ^{121}I ;
- (c) ^{131}I ;
- (d) ^{112}In ; and
- (e) $^{99\text{m}}\text{Tc}$.

169. (New) A composition comprising the antibody or portion thereof of claim 162 and a carrier.

170. (New) An isolated cell that produces the antibody of claim 162.

171. (New) An isolated cell line that produces the antibody of claim 162.

172. (New) A hybridoma that produces the antibody of claim 162.

173. (New) A hybridoma that produces the antibody of claim 163.

174. (Once Amended) A method of detecting Neutrokin- α protein comprising:

- (a) contacting the Neutrokin- α protein with the antibody or portion thereof of claim 162; and
- (b) detecting the Neutrokin- α protein..

175. (New) The method of claim 174 wherein the Neutrokin- α protein is in a biological sample.

176. (New) The method of claim 174 wherein the Neutrokin- α protein is *in vivo*.

177. (New) The method of claim 174 wherein the antibody or portion thereof is a monoclonal antibody.

178. (New) The method of claim 174 wherein the antibody or portion thereof is a polyclonal antibody.

179. (New) The method of claim 174 wherein the antibody or portion thereof is a Fab fragment.

180. (New) The method of claim 174 wherein the antibody or portion thereof is labeled.

181. (New) The method of claim 180 wherein the label is selected from the group consisting of:

- (a) an enzyme label;
- (b) a radioisotope;
- (c) a fluorescent label; and
- (d) biotin.

182. (New) The method of claim 181 wherein the label is a radioisotope selected from the group consisting of:

- (a) ^{125}I ;
- (b) ^{121}I ;
- (c) ^{131}I ;
- (d) ^{112}In ; and
- (e) $^{99\text{m}}\text{Tc}$.

183. (New) An isolated antibody or portion thereof that specifically binds to a protein consisting of the extracellular domain of the protein encoded by the cDNA contained in ATCC Deposit Number 97768.

184. (New) The antibody or portion thereof of claim 183 which is a monoclonal antibody.

185. (New) The antibody or portion thereof of claim 183 which is a polyclonal antibody.

186. (New) The antibody or portion thereof of claim 183 which is a Fab fragment.

187. (New) The antibody or portion thereof of claim 183 which is labeled.

188. (Once Amended) The antibody or portion thereof of claim 187 wherein the label is selected from the group consisting of:

- (a) an enzyme label;
- (b) a radioisotope;
- (c) a fluorescent label; and
- (d) biotin.

189. (Once Amended) The antibody or portion thereof of claim 188 wherein the label is a radioisotope selected from the group consisting of:

- (a) ^{125}I ;
- (b) ^{121}I ;
- (c) ^{131}I ;
- (d) ^{112}In ; and
- (e) $^{99\text{m}}\text{Tc}$.

190. (New) A composition comprising the antibody or portion thereof of claim 183 and a carrier.

191. (New) An isolated cell that produces the antibody of claim 183.

192. (New) An isolated cell line that produces the antibody of claim 183.

193. (New) A hybridoma that produces the antibody of claim 183.

194. (New) A hybridoma that produces the antibody of claim 184.

195. (Once Amended) A method of detecting Neutrokin- α protein comprising:

- (a) contacting the Neutrokin- α protein with the antibody or portion thereof of claim 183; and
- (b) detecting the Neutrokin- α protein.

196. (New) The method of claim 195 wherein the Neutrokin- α protein is in a biological sample.

197. (New) The method of claim 195 wherein the Neutrokin- α protein is *in vivo*.

198. (New) The method of claim 195 wherein the antibody or portion thereof is a monoclonal antibody.

199. (New) The method of claim 195 wherein the antibody or portion thereof is a polyclonal antibody.

200. (New) The method of claim 195 wherein the antibody or portion thereof is a Fab fragment.

201. (New) The method of claim 195 wherein the antibody or portion thereof is labeled.

202. (New) The method of claim 201 wherein the label is selected from the group consisting of:

- (a) an enzyme label;
- (b) a radioisotope;
- (c) a fluorescent label; and
- (d) biotin.

203. (New) The method of claim 202 wherein the label is a radioisotope selected from the group consisting of:

- (a) ^{125}I ;
- (b) ^{121}I ;
- (c) ^{131}I ;
- (d) ^{112}In ; and
- (e) $^{99\text{m}}\text{Tc}$.

204. (New) An isolated antibody or portion thereof that specifically binds to a protein consisting of an amino acid sequence selected from the group consisting of:

(a) the amino acid sequence of an amino-terminal deletion protein mutant of the full-length protein encoded by the cDNA contained in ATCC Deposit Number 97768, wherein said amino-terminal deletion protein mutant excludes up to 190 amino acid residues from the amino terminus of said full-length protein encoded by the cDNA contained in ATCC Deposit Number 97768;

(b) the amino acid sequence of a carboxy-terminal deletion protein mutant of the full-length protein encoded by the cDNA contained in ATCC Deposit Number 97768, wherein said carboxy-terminal deletion protein mutant excludes up to 11 amino acid residues from the carboxy terminus of said full-length protein encoded by the cDNA contained in ATCC Deposit Number 97768; and

(c) the amino acid sequence of an amino- and carboxy-terminal deletion protein mutant of the full-length protein encoded by the cDNA contained in ATCC Deposit Number 97768, wherein said amino- and carboxy-terminal deletion protein mutant excludes up to 190 amino acid residues from the amino terminus and up to 11 amino acid residues from the carboxy terminus of said said full-length protein encoded by the cDNA contained in ATCC Deposit Number 97768.

205. (New) The antibody or portion thereof of claim 204 that specifically binds a protein consisting of amino acid sequence (a).

206. (New) The antibody or portion thereof of claim 204 that specifically binds a protein consisting of amino acid sequence (b).

207. (New) The antibody or portion thereof of claim 204 that specifically binds a protein consisting of amino acid sequence (c).

208. (New) The antibody or portion thereof of claim 204 which is a monoclonal antibody.

209. (New) The antibody or portion thereof of claim 204 which is a polyclonal antibody.

210. (New) The antibody or portion thereof of claim 204 which is a Fab fragment.

211. (Once Amended) The antibody or portion thereof of claim 204 which is labeled.

212. (Once Amended) The antibody or portion thereof of claim 211 wherein the label is selected from the group consisting of:

- (a) an enzyme label;
- (b) a radioisotope;
- (c) a fluorescent label; and
- (d) biotin.

213. (New) The antibody or portion thereof of claim 212 wherein the label is a radioisotope selected from the group consisting of:

- (a) ^{125}I ;
- (b) ^{121}I ;
- (c) ^{131}I ;
- (d) ^{112}In ; and
- (e) $^{99\text{m}}\text{Tc}$.

214. (New) A composition comprising the antibody or portion thereof of claim 204 and a carrier.

215. (New) An isolated cell that produces the antibody of claim 204.

216. (New) An isolated cell line that produces the antibody of claim 204.

217. (New) A hybridoma that produces the antibody of claim 204.

218. (New) A hybridoma that produces the antibody of claim 208.

219. (Once Amended) A method of detecting Neutrokin- α protein comprising:

- (a) contacting the Neutrokin- α protein with the antibody or portion thereof of claim 204; and
- (b) detecting the Neutrokin- α protein.

220. (New) The method of claim 219 wherein the Neutrokin- α protein is in a biological sample.

221. (New) The method of claim 219 wherein the Neutrokin- α protein is *in vivo*.

222. (New) The method of claim 219 wherein the antibody or portion thereof is a monoclonal antibody.

223. (New) The method of claim 219 wherein the antibody or portion thereof is a polyclonal antibody.

224. (New) The method of claim 219 wherein the antibody or portion thereof is a Fab fragment.

225. (New) The method of claim 219 wherein the antibody or portion thereof is labeled.

226. (New) The method of claim 225 wherein the label is selected from the group consisting of:

- (a) an enzyme label;
- (b) a radioisotope;
- (c) a fluorescent label; and
- (d) biotin.

227. (New) The method of claim 226 wherein the label is a radioisotope selected from the group consisting of:

- (a) ^{125}I ;
- (b) ^{121}I ;
- (c) ^{131}I ;
- (d) ^{112}In ; and
- (e) $^{99\text{m}}\text{Tc}$.

228. (Once Amended) An isolated antibody or portion thereof that specifically binds to a protein consisting of a fragment of the polypeptide encoded by the cDNA contained in ATCC Deposit Number 97768, wherein said fragment comprises an amino acid sequence of at least 30 contiguous amino acid residues of the polypeptide encoded by the cDNA contained in ATCC Deposit Number 97768.

229. (Cancelled)

230. (New) The antibody or portion thereof of claim 228, wherein said fragment comprises an amino acid sequence of at least 50 contiguous amino acid residues of the polypeptide encoded by the cDNA contained in ATCC Deposit Number 97768.

231. (New) The antibody or portion thereof of claim 228 which is a monoclonal antibody.

232. (New) The antibody or portion thereof of claim 228 which is a polyclonal antibody.

233. (New) The antibody or portion thereof of claim 228 which is a Fab fragment.

234. (New) The antibody or portion thereof of claim 228 which is labeled.

235. (Once Amended) The antibody or portion thereof of claim 234 wherein the label is selected from the group consisting of:

- (a) an enzyme label;
- (b) a radioisotope;
- (c) a fluorescent label; and
- (d) biotin.

236. (Once Amended) The antibody or portion thereof of claim 235 wherein the label is a radioisotope selected from the group consisting of:

- (a) ^{125}I ;
- (b) ^{121}I ;
- (c) ^{131}I ;
- (d) ^{112}In ; and
- (e) $^{99\text{m}}\text{Tc}$.

237. (New) A composition comprising the antibody or portion thereof of claim 228 and a carrier.

238. (New) An isolated cell that produces the antibody of claim 228.

239. (New) An isolated cell line that produces the antibody of claim 228.

240. (New) A hybridoma that produces the antibody of claim 228.

241. (New) A hybridoma that produces the antibody of claim 231.

242. (Once Amended) A method of detecting Neutrokin- α protein comprising:

- (a) contacting the Neutrokin- α protein with the antibody or portion thereof of claim 228; and
- (b) detecting the Neutrokin- α protein.

243. (New) The method of claim 242 wherein the Neutrokin- α protein is in a biological sample.

244. (New) The method of claim 242 wherein the Neutrokin- α protein is *in vivo*.

245. (New) The method of claim 242 wherein the antibody or portion thereof is a monoclonal antibody.

246. (New) The method of claim 242 wherein the antibody or portion thereof is a polyclonal antibody.

247. (New) The method of claim 242 wherein the antibody or portion thereof is a Fab fragment.

248. (New) The method of claim 242 wherein the antibody or portion thereof is labeled.

249. (New) The method of claim 248 wherein the label is selected from the group consisting of:

- (a) an enzyme label;
- (b) a radioisotope;
- (c) a fluorescent label; and
- (d) biotin.

250. (New) The method of claim 249 wherein the label is a radioisotope selected from the group consisting of:

- (a) ^{125}I ;
- (b) ^{121}I ;
- (c) ^{131}I ;
- (d) ^{112}In ; and
- (e) $^{99\text{m}}\text{Tc}$.

251. (New) An isolated antibody or portion thereof that specifically binds to an isolated Neurokinine-alpha multimer comprising an amino acid sequence consisting of amino acids 134-285 of SEQ ID NO:2.

252. (New) The antibody or portion thereof of claim 251 which is a monoclonal antibody.

253. (New) The antibody or portion thereof of claim 251 which is a polyclonal antibody.

254. (New) The antibody or portion thereof of claim 251 which is a Fab fragment.

255. (New) The antibody or portion thereof of claim 251 which is labeled.

256. (New) The antibody or portion thereof of claim 255 wherein the label is selected from the group consisting of:

- (a) an enzyme label;
- (b) a radioisotope;
- (c) a fluorescent label; and
- (d) biotin.

257. (New) The antibody or portion thereof of claim 256 wherein the label is a radioisotope selected from the group consisting of:

- (a) ^{125}I ;
- (b) ^{121}I ;
- (c) ^{131}I ;
- (d) ^{112}In ; and
- (b) $^{99\text{m}}\text{Tc}$.

258. (New) A composition comprising the antibody or portion thereof of claim 251 and a carrier.

259. (New) An isolated cell that produces the antibody of claim 251.
260. (New) An isolated cell line that produces the antibody of claim 251.
261. (New) A hybridoma that produces the antibody of claim 251.
262. (New) A hybridoma that produces the antibody of claim 252.
263. (New) A method of detecting Neutrokin- α protein comprising:
- (a) contacting the Neutrokin- α protein with the antibody or portion thereof of claim 251; and
 - (b) detecting the Neutrokin- α protein.
264. (New) The method of claim 263 wherein the Neutrokin- α protein is in a biological sample.
265. (New) The method of claim 263 wherein the Neutrokin- α protein is *in vivo*.
266. (New) The method of claim 263 wherein the antibody or portion thereof is a monoclonal antibody.
267. (New) The method of claim 263 wherein the antibody or portion thereof is a polyclonal antibody.
268. (New) The method of claim 263 wherein the antibody or portion thereof is a Fab fragment.
269. (New) The method of claim 263 wherein the antibody or portion thereof is labeled.

270. (New) The method of claim 269 wherein the label is selected from the group consisting of:

- (a) an enzyme label;
- (b) a radioisotope;
- (c) a fluorescent label; and
- (d) biotin.

271. (New) The method of claim 270 wherein the label is a radioisotope selected from the group consisting of:

- (a) ^{125}I ;
- (b) ^{121}I ;
- (c) ^{131}I ;
- (d) ^{112}In ; and
- (e) $^{99\text{m}}\text{Tc}$.

272. (New) An isolated antibody or portion thereof that specifically binds to an isolated recombinant Neutrokin- α protein purified from a cell culture wherein the cells in said cell culture comprise a polynucleotide encoding amino acids 1-285 of SEQ ID NO:2 operably associated with a regulatory sequence that controls gene expression.

273. (New) The antibody or portion thereof of claim 272 wherein the cells in said cell culture are eukaryotic cells.

274. (New) The antibody or portion thereof of claim 272 wherein the cells in said cell culture are Sf9 cells.

275. (New) The antibody or portion thereof of claim 272 wherein the cells in said cell culture are *E. coli* cells.

276. (New) The antibody or portion thereof of claim 272 which is a monoclonal antibody.

277. (New) The antibody or portion thereof of claim 272 which is a polyclonal antibody.

278. (New) The antibody or portion thereof of claim 272 which is a Fab fragment.

279. (New) The antibody or portion thereof of claim 272 which is labeled.

280. (New) The antibody or portion thereof of claim 279 wherein the label is selected from the group consisting of:

- (a) an enzyme label;
- (b) a radioisotope;
- (c) a fluorescent label; and
- (d) biotin.

281. (New) The antibody or portion thereof of claim 280 wherein the label is a radioisotope selected from the group consisting of:

- (a) ^{125}I ;
- (b) ^{121}I ;
- (c) ^{131}I ;
- (d) ^{112}In ; and
- (c) $^{99\text{m}}\text{Tc}$.

282. (New) A composition comprising the antibody or portion thereof of claim 272 and a carrier.

283. (New) An isolated cell that produces the antibody of claim 272.

284. (New) An isolated cell line that produces the antibody of claim 272.

285. (New) A hybridoma that produces the antibody of claim 272.

286. (New) A hybridoma that produces the antibody of claim 276.

287. (New) A method of detecting Neutrokin- α protein comprising:
(a) contacting the Neutrokin- α protein with the antibody or portion thereof of claim 272; and
(b) detecting the Neutrokin- α protein.

288. (New) The method of claim 287 wherein the Neutrokin- α protein is in a biological sample.

289. (New) The method of claim 287 wherein the Neutrokin- α protein is *in vivo*.

290. (New) The method of claim 287 wherein the antibody or portion thereof is a monoclonal antibody.

291. (New) The method of claim 287 wherein the antibody or portion thereof is a polyclonal antibody.

292. (New) The method of claim 287 wherein the antibody or portion thereof is a Fab fragment.

293. (New) The method of claim 287 wherein the antibody or portion thereof is labeled.

294. (New) The method of claim 293 wherein the label is selected from the group consisting of:

- (a) an enzyme label;
- (b) a radioisotope;
- (c) a fluorescent label; and
- (d) biotin.

295. (New) The method of claim 294 wherein the label is a radioisotope selected from the group consisting of:

- (a) ^{125}I ;
- (b) ^{121}I ;
- (c) ^{131}I ;
- (d) ^{112}In ; and
- (e) $^{99\text{m}}\text{Tc}$.

296. (New) An isolated antibody or portion thereof obtained from an animal immunized with an isolated recombinant Neutrokin- α protein purified from a cell culture wherein the cells in said cell culture comprise a polynucleotide encoding amino acids 1-285 of SEQ ID NO:2 operably associated with a regulatory sequence that controls gene expression, wherein said antibody or portion thereof specifically binds said Neutrokin- α protein.

297. (New) The antibody or portion thereof of claim 296 wherein the cells in said cell culture are eukaryotic cells.

298. (New) The antibody or portion thereof of claim 296 wherein the cells in said cell culture are Sf9 cells.

299. (New) The antibody or portion thereof of claim 296 wherein the cells in said cell culture are *E. coli* cells.

300. (New) The antibody or portion thereof of claim 296 which is a monoclonal antibody.

301. (New) The antibody or portion thereof of claim 296 which is a polyclonal antibody.

302. (New) The antibody or portion thereof of claim 296 which is a Fab fragment.

303. (New) The antibody or portion thereof of claim 296 which is labeled. 9

304. (New) The antibody or portion thereof of claim 303 wherein the label is selected from the group consisting of:

- (a) an enzyme label;
- (b) a radioisotope;
- (c) a fluorescent label; and
- (d) biotin.

305. (New) The antibody or portion thereof of claim 304 wherein the label is a radioisotope selected from the group consisting of:

- (a) ^{125}I ;
- (b) ^{121}I ;
- (c) ^{131}I ;
- (d) ^{112}In ; and
- (e) $^{99\text{m}}\text{Tc}$.

306. (New) A composition comprising the antibody or portion thereof of claim 296 and a carrier.

307. (New) An isolated cell that produces the antibody of claim 296.

308. (New) An isolated cell line that produces the antibody of claim 296.

309. (New) A hybridoma that produces the antibody of claim 296.

310. (New) A hybridoma that produces the antibody of claim 300.

311. (New) A method of detecting Neutrokin- α protein comprising:

- (a) contacting the Neutrokin- α protein with the antibody or portion thereof of claim 296; and
- (b) detecting the Neutrokin- α protein.

312. (New) The method of claim 311 wherein the Neutrokin- α protein is in a biological sample.

313. (New) The method of claim 311 wherein the Neutrokin- α protein is *in vivo*.

314. (New) The method of claim 311 wherein the antibody or portion thereof is a monoclonal antibody.

315. (New) The method of claim 311 wherein the antibody or portion thereof is a polyclonal antibody.

316. (New) The method of claim 311 wherein the antibody or portion thereof is a Fab fragment.

317. (New) The method of claim 311 wherein the antibody or portion thereof is labeled.

318. (New) The method of claim 317 wherein the label is selected from the group consisting of:

- (a) an enzyme label;
- (b) a radioisotope;
- (c) a fluorescent label; and
- (d) biotin.

319. (New) The method of claim 318 wherein the label is a radioisotope selected from the group consisting of:

- (a) ^{125}I ;
- (b) ^{121}I ;
- (c) ^{131}I ;
- (d) ^{112}In ; and
- (e) $^{99\text{m}}\text{Tc}$.